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## Moderate realism and metaphors. Reply to Hans Mooij

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Theo A. F. Kuipers

## MODERATE REALISM AND METAPHORS

### REPLY TO HANS MOOIJ

When I was preparing my dissertation in the years 1973-7, Hans Mooij and Aart Stam were the ideal supervisors. The more problematic stories about supervisors I heard, the more I understood how exceptionally good my situation as a “promovendus” (Ph.D. student) was. Reading Mooij’s paper reminded me again of this fact, but now in a somewhat embarrassing way. Had I shown him my draft of ICR, he would have redrawn my attention to Toulmin’s discussion of the map metaphor in his seminal book. Now my only face-saving option is to confess that my ideal world includes Hans Mooij as permanent supervisor.

#### Moderate Realism

Let me start, however, with what I see as Mooij’s main critical point. According to him, I do not make sufficiently clear the extent to which my constructive realism goes beyond minimal metaphysical realism, without becoming essentialist realism by assuming an ideal conceptualization of the world. He writes in Section 1:

If science can deliver objective knowledge about the observable and non-observable aspects of the world, then there must be, not only the world, but *a way the world is*; it cannot be completely indefinite or malleable. Perhaps there need not be one and only one way the world is, independent of any conceptualization. However, certain conceptualizations must be accurate and correct.

I certainly agree that I assume some in-between, moderate, metaphysical realism, but I cannot agree with his suggestion that this should be based on a notion of ‘correct conceptualizations’ that is weaker than the notion of (being part of) the ideal conceptualization. Certainly, if he means by a correct conceptualization merely that all its terms are referring to something in – or some aspect of – the world, then I could agree. But I am afraid Mooij means more than this minimal condition for a satisfactory vocabulary, for the

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reference condition does not exclude terms like ‘grue’ and one merely referring to an “undetached rabbit part,” to vary Quine’s famous example. Instead of postulating that there are correct vocabularies in a stronger sense, my moderate metaphysics regarding the claim that “there must be ... *a way the world is*” is very explicitly of a hybrid metaphysical-epistemological nature as, for example, expressed in the concluding passage of Section 13.5 (“The metaphysical nature of scientific research”, ICR, p. 327):

In sum, the scientist studies objective features of THE NOMIC WORLD by choosing a domain and a vocabulary. Although many choices, partly of a conceptual constructive nature, have to be made, nothing like radical social constructivism is the result, for THE NOMIC WORLD determines what we will find, given our choices. That is, although constructive realism recognizes several relativistic features, it does not at all lead to radical relativism: given previous choices, we cannot find what we want. Of course, we can frequently find what we want, but only by adapting our choices of domain and vocabularies in an appropriate way, that is, in agreement with the nature of THE NOMIC WORLD.<sup>16</sup>

Hence, in my view the “way the world is” is not something that can be expressed in terms of (in-)correct vocabularies but is of a dispositional nature, and hence, metaphorically, of a stimulus-response nature: imposing *this* vocabulary on *that* domain yields those true and false statements. I also think that this is very much the kind of moderate metaphysical realism that is subscribed to by Niiniluoto, Searle and, for that matter, Toulmin (1953, p. 128; 1960, p. 115). Hence, being in their company, as Mooij claims I am, is what I agree about, but I do not think that Boyd and Harré belong to the same group, simply because, as Mooij points out, they at least subscribe to some kind of correct, if not ideal, language.

I can further illustrate my view with one particular point in his argumentation. He writes: “If there are correct or ideal conceptualizations, then there may come an end to the improvement of vocabularies; just as (in Kuipers’ view) there may come an end to the improvement of *theories*, viz. by finding the strongest true exemplar.” (p. 497) This comparison of vocabularies and theories in terms of improvement seems inadequate to me. Given a domain and a vocabulary the improvement of theories about that domain in that vocabulary has its limits, set by the thus implied (unknown, but operative) truth. However, given only a domain, there is no boundary for correct vocabularies, at least not for referring ones, for, as already indicated, they can be created at will. On the other hand, if correct vocabularies in a stronger sense were to exist and their improvement were to come to an end, they would be

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<sup>16</sup> Incidentally, the closing phrase “in agreement with the nature of THE NOMIC WORLD” is an essentialist slip of my pen. It would have been better to write: “in agreement with – and using the provisional findings about – THE NOMIC WORLD”.

combinable in some way or other and lead to the ideal vocabulary for that domain. Certainly this would be a serious option if the world were designed, but we may assume that it isn't.

### Metaphors

Turning to the general topic of metaphors, I like Boyd's distinction, referred to by Mooij, between constitutive (C-) and exegetic (E-)metaphors. In principle, both can occur in science or be about science. Although I certainly have interest in both kinds of metaphors and analogies in science (SiS, p. 11) and whereas I do not remember having read or heard about stimulating C-metaphors about science, my specific interest in metaphors in the last chapter of ICR certainly concerns only E-metaphors about science, viz. exegeses of my meta-view of science as developed in ICR. As indicated above, Hans Mooij points out, in his characteristically polite way, that I was essentially re-inventing the wheel by my arguments in favor of the map metaphor relative to the mirror and the net metaphor. In particular, rereading Toulmin's excellent plea for the map metaphor and against the net metaphor convinced me that he had already said the most essential things in this respect. And indeed, as suggested by Mooij, in the relevant chapter ("Theories and Maps") Toulmin is much less the anti-realist than he is usually supposed to be, probably on the basis of the preceding chapter ("Laws of Nature"). Even the latter division can be questioned: rereading Toulmin's claims about determining the "scope" of both laws and theories, it is tempting to reinterpret his analysis in terms of what I mean by dialectically establishing a domain in combination with a vocabulary (exceeding the "domain vocabulary") and the true theory (ICR, p. 332):

More precisely, in the short-term dynamics of 'science in the making' three things are established in dialectical interaction: the domain as a (unproblematically conceptualized) part or aspect of THE NOMIC WORLD, the (extra) vocabulary and the true theory about that domain as seen through that vocabulary.

Hence, Toulmin's claims seem very much compatible with the constructive realist attitude developed in ICR. However, unfortunately, the precise nature of this dialectical interaction has not yet been elaborated. Only some anticipations were set out regarding domain variation (ICR, p. 207). A detailed elaboration of "truth approximation by domain variation" is not merely a technical challenge, it will certainly improve our philosophical-methodological insights. For a start, see my reply to Zwart.

Of course, I was very happy with Mooij's support of the map metaphor, by references and arguments. It inspired me to combine the map metaphor with

the language of possibilities, leading to the following quasi-metaphorical characterizations of four kinds of research (cf. SiS, Ch. 1).

- Theoretical research:  
mapping nomic (physical, chemical, biological,...) (im-)possibilities
- Experimental research:  
realizing and mapping (by definition, nomic) possibilities
- Technical/design research:  
mapping and realizing intended possibilities
- Historical research:  
mapping (naturally or artificially) realized possibilities

I speak of quasi-metaphorical characterizations because it is hard to conceive of the language of possibilities, let alone that of their realization, as metaphorical. The combination with mapping, however, in particular when applied to theoretical or nomological research, seems to satisfy all the criteria I suggested in ICR (pp. 330-2) for an adequate metaphor for that kind of research.<sup>17</sup> According to that exposition, we should distinguish sharply between the vocabularies and theories formulated with them to characterize a given domain (beyond its characterization in terms of the “domain vocabulary”). In the terms of the map metaphor, a vocabulary corresponds to a *mapping method*, determining which aspects of the domain will be mapped in what manner. A specific theory corresponds to the result of a particular attempt to map the domain, the *resulting map*. In this way the map metaphor satisfies in general three of the four joint criteria for a metaphor for vocabularies and theories: both have to be and are constructive, selective and referentially improvable. Moreover, theories as resulting maps satisfy the theory-specific criterion that theories should be substantially improvable, for many mistakes can be made in the application of a mapping method leading to a mapping product (cf. Toulmin, 1953, p. 127; 1960, p. 114).

The three joint features and the theory-specific one remain when one speaks more specifically of mapping possibilities, introducing the non-metaphorical notion of possibilities. However, a metaphor for theories should also include the nomic target of theories, viz. nomic possibilities. By speaking of “mapping nomic (im-)possibilities” I include this aspect by definition, leading to a second non-metaphorical aspect of the metaphor. Last but not least, an adequate metaphor should highlight the already indicated dialectical interaction in establishing three things: “the domain as a (unproblematically conceptualized) part or aspect of THE NOMIC WORLD, the (extra)

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<sup>17</sup> I thank Hans Mooij for revealing the mistake regarding the net-metaphor in Table 13.2 (ICR, p. 333), reported in his Note 16. Moreover, I certainly agree with Mooij’s closing statement that this metaphor suggests the wrong kind of metaphysics, viz. minimal realism.

vocabulary and the true theory about that domain as seen through that vocabulary.” (ICR, p. 332). This dialectical feature seems also to be covered, like the nomic feature, not so much by the metaphorical mapping but by its specific target of nomic possibilities. Since a vocabulary determines the “conceptual possibilities,” and the combination of a vocabulary and a given domain determines the “nomic possibilities,” and hence “the true theory,” there are two independent variables and a dependent one, which leaves room for a dialectical determination of an attractive triple.

In sum, instead of finding a satisfactory pure metaphor, asked for in the closing sentences of ICR, we have obtained a highly satisfactory partial metaphor. Guided by this partial metaphor, I would like to confirm that I see truth approximation not as “just an epistemic notion. It is also a moral injunction” (p. 499), not only for scientists, but also for judges and other professionals for whom the (relevantly restricted and conceptualized) truth makes all the difference. However, this certainly is not a moral injunction for all professionals – it does not hold for artists, for example.

### REFERENCE

- Toulmin, S. (1953). *The Philosophy of Science. An Introduction*. London: Hutchinson. Also: New York: Harper & Row, 1960.